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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/976,462	10/12/2001	Akira Matsumoto	939_030	9975

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EXAMINER

LAVARIAS, ARNEL C

ART UNIT PAPER NUMBER

2872

DATE MAILED: 10/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/976,462

Applicant(s)

MATSUMOTO ET AL.

Examiner

Arnel C. Lavarias

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/12/01, 4/1/02, 8/2/02.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3 and 5-9 is/are rejected.
- 7) ☒ Claim(s) 2, 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6, 7. 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description:

Figures 1(a), 1(b), 2(a), 2(b), 4(b), 4(c)- Reference numeral 8a.

A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

Page 1, line 14; Page 2, line 26- Reference character 'F' not shown in Figures 3(a)-(b), 4(a)-(c)

Page 7, line 14; Abstract, page 14, line 7- Reference numeral '7' not shown in Figures 1(a)-(b).

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to because of the following informality:

Figure 1(a) and Figure 2(a)- Reference character 'L' should read 'x'.

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A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities:

Page 1, line 14; Page 7, lines 11, 13- 'Fig. 4' should read 'Figs. 4(a)-(c)'

Page 3, line 8- 'It is easily occurs that the' should read 'The'

Page 3, line 9- insert 'easily' after 'face'

Page 3, line 22- 'its ages' should read 'aging'

Page 4, line 4; Page 9, line 18- '85 o C/85%RH x 2' should read '85° C/85% RH for 2'

Page 4, line 26- 'faces' should read 'face'

Page 7, line 11- 'Fig. 3' should read 'Figs. 3(a)-(b)'

Page 7, lines 12, 29, 30; Page 8, line 17- 'Fig. 1' should read 'Figs. 1(a)-(b)'

Page 7, line 28; Page 8, lines 1, 17, 27- 'Fig. 2' should read 'Figs. 2(a)-(b)'

Page 9, line 20- delete extra 'that'

Page 10, line 1- 'module' should read 'modulus'.

Appropriate correction is required.

Claim Objections

5. Claims 1-9 are objected to because of the following informalities:

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Claim 1, lines 4, 5; Claim 2, line 2; Claim 3, line 2; Claim 4, line 2; Claim 6, line 2;

Claim 7, line 1; Claim 8, lines 2, 5- delete 'B'

Claim 2, line 4- insert 'L' after 'length'

Claim 5 recites the limitation "the end face of the fiber array" in line 2. There is insufficient antecedent basis for this limitation in the claim. It is suggested that 'an end face of the fiber array' be used instead.

Claim 8 recites the limitation "the end face" in line 5. There is insufficient antecedent basis for this limitation in the claim. It is suggested that 'the end face of the assembled fiber array' be used instead.

Claim 8, line 5- insert 'face' after 'which the end'

Claim 8, line 6- 'end face of the fiber' should read 'end faces of the fibers'

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites the limitation 'the end face of the fiber array' in line 2. However, the specification of the disclosure (See for example page 5, lines 26-29; Page 8, line 1-5) states that the peripheral adhesive is recessed with respect to the end face of the fibers,

not the end face of the fiber array. The limitation as recited in Claim 6 is not supported by the specification of the disclosure.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Ichiki et al.

With respect to Claim 1, Ichiki et al. discloses a fiber array (See Figures 3, 4, 5, or 9) housing a stripped fiber (See 42 in Figures 3, 4, 5, or 9) in a V-groove (See 30 in Figures 3, 4, 5, or 9) of a V-groove substrate (See 22 in Figures 3, 4, 5, or 9) comprising a fiber fixing substrate (See 24 in Figures 3, 4, 5, or 9) fixing the stripped fiber; a peripheral adhesive (See 60 in Figures 3, 4, 5, or 9) disposed around the stripped fiber; wherein an end face of the peripheral adhesive is recessed with respect to an end face of the fiber.

With respect to Claim 5, Ichiki et al. discloses the end face of the fiber being flush with the end face of the fiber array (See Figure 3, 4, or 5) or protrudes therefrom (See Figure 9).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1, 3, 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirai et al. in view of Ichiki et al.

Hirai et al. discloses a fiber array (See Figures 8 or 9) housing a stripped fiber (See 10 in Figures 8 or 9) in a V-groove (See Page 10, lines 38-47; Figures 8 or 9) of a V-groove substrate (See 4 or 5 in Figures 8 or 9) comprising a peripheral adhesive (See 11 in Figure 8; Page 7, line 45-Page 9, line 18; Page 10, line 25-Page 11, line 30) disposed around the stripped fiber; wherein an end face of the peripheral adhesive is recessed with respect to an end face of the fiber (See Page 10, lines 38-47). Hirai et al. additionally discloses that the peripheral adhesive is recessed about 10 μm from the end face of the fiber (See Page 10, lines 38-47; Page 4, line 56-Page 5, line 6), allowing the fiber end face to protrude from the fiber array. Hirai et al. also discloses that peripheral adhesive having a Young's modulus of at least 0.03 GPa (or 3.059 kgf/mm²) (See Table 1 on Page 9), and an optical device being connected or fixed to the fiber array (See 1c in Figures 8 or 9). Hirai et al. lacks a fiber fixing substrate fixing the stripped fiber. However, Ichiki et al. teaches a fiber array as recited in Claim 1. In particular, Ichiki et al. teaches a fiber fixing substrate (See 24 in Figures 3, 4, 5, or 9) fixing the stripped fiber onto the V-groove substrate. Therefore, it would have been obvious to one having ordinary skill in

the art at the time the invention was made to provide a fiber fixing substrate to fix the stripped fibers, as taught by Ichiki et al., in the fiber array as disclosed by Hirai et al.

One would have been motivated to do this to provide protection and mechanical stability for the fibers placed in the V-grooves.

Allowable Subject Matter

12. Claims 2 and 4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter:

Claims 2 and 4 are allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest a recess depth x that the end face of the peripheral adhesive is recessed with respect to the end face of the fiber being related to a water absorption ratio ϕ of the peripheral adhesive and a length L over which the optical fiber is adhered to the V-groove by the equation $x = \frac{0.1 \cdot (\phi \cdot L)}{2}$.

Ichiki et al. discloses a fiber array as recited in Claim 1. However, no teaching is present to have the peripheral adhesive be recessed at a depth with respect to the end face of the fiber based on the water absorption properties of the peripheral adhesive and the length of the fiber that is adhered to the V-groove in the V-groove substrate.

Hirai et al. also discloses fiber array wherein the peripheral adhesive is recessed with respect to the end face of the fiber. However, no teaching is present to have the peripheral adhesive be recessed at a depth with respect to the end face of the fiber based

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on the water absorption properties of the peripheral adhesive and the length of the fiber that is adhered to the V-groove in the V-groove substrate

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 703-305-4007. The examiner can normally be reached on M-F 8:30 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on 703-308-1687. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.



Arnel C. Lavarias
October 16, 2002



Cassandra Spyrou
Supervisory Patent Examiner
Technology Center 2800